



# Homeland Security

## National Initiative for Cybersecurity Careers and Studies (NICCS) Webinar

April 25, 2013

# Welcome to the NICCS Webinar!

Thank you for joining us today. During this presentation, you will:

- Learn about the National Initiative for Cybersecurity Education (NICE), and one of its implementation tools, the National Initiative for Cybersecurity Careers and Studies (NICCS).
- Discover new educational resources and learn how you can plot your career path.
- Obtain NICCS Supervisory Office (SO) contact information for follow-up questions and inquiries ([NICCS@hq.dhs.gov](mailto:NICCS@hq.dhs.gov)).

We encourage you to visit the [www.niccs.us-cert.gov](http://www.niccs.us-cert.gov) page during this presentation so you can navigate the site with us.



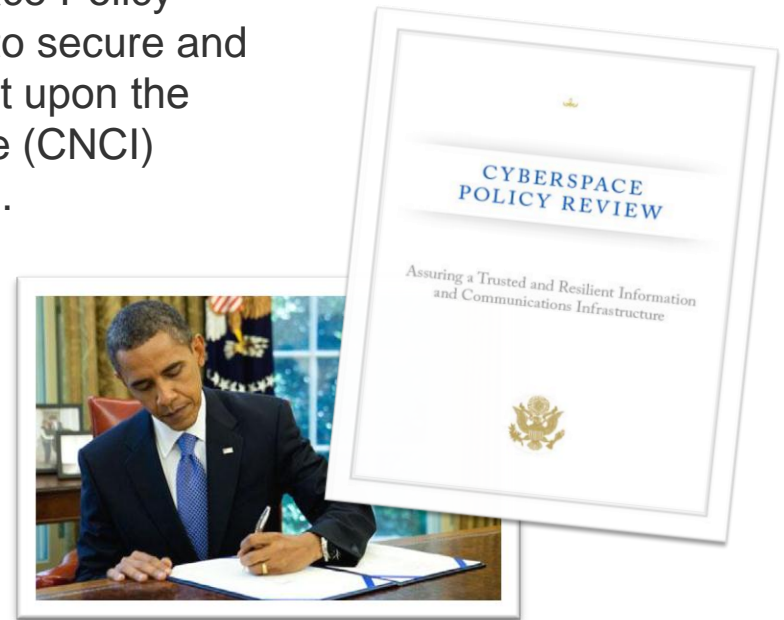
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# Cyber Threats Increase Every Day

The Department of Homeland Security (DHS) is responsible for overseeing the protection of the .gov domain and for providing assistance and expertise to private sector owners and operators of cyber networks

- As a Nation, we must respond by improving our technical infrastructure and by developing and maintaining a highly skilled cyber workforce capable of protecting our networks against cyber attacks.
- In May 2009, the President ordered a Cyberspace Policy Review to develop a comprehensive approach to secure and defend America's infrastructure. The review built upon the Comprehensive National Cybersecurity Initiative (CNCI) launched by President George W. Bush in 2008.
- In this presentation, you will learn about an initiative that expanded from CNCI – the National Initiative for Cybersecurity Education (NICE) – and its goals to improve the Nation's cybersecurity workforce.



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# Formation of NICE

In response to increased cyber threats across the Nation, the National Initiative for Cybersecurity Education (NICE) expanded from a previous effort, the Comprehensive National Cybersecurity Initiative (CNCI) #8.

- NICE focuses on cybersecurity awareness, education, training, and professional development.
- NICE was formed in March 2011 and is a nationally-coordinated effort comprised of more than 20 federal departments and agencies, and numerous partners in academia and industry.

DHS has been working since October 2012 to fulfill recommendations that expand the national pipeline of men and women with advanced cybersecurity skills to enable DHS to become a preferred employer for the talent produced by that pipeline, and position the Department to help make the United States safer, more secure, and more resilient.



# NICCS Goals

The vision of NICCS is to serve as an online resource for the Nation to learn about cybersecurity awareness, education, careers, and workforce development opportunities.

## **Goal 1: Build a National Cybersecurity Resource**

- Elevate cybersecurity awareness and encourage the public to adopt a culture of cyberspace security.

## **Goal 2: Promote Cybersecurity Education**

- Nurture the future cybersecurity workforce by promoting kindergarten through post graduate level education.
- Build an online community for cybersecurity professionals and others to gain knowledge related to their field.

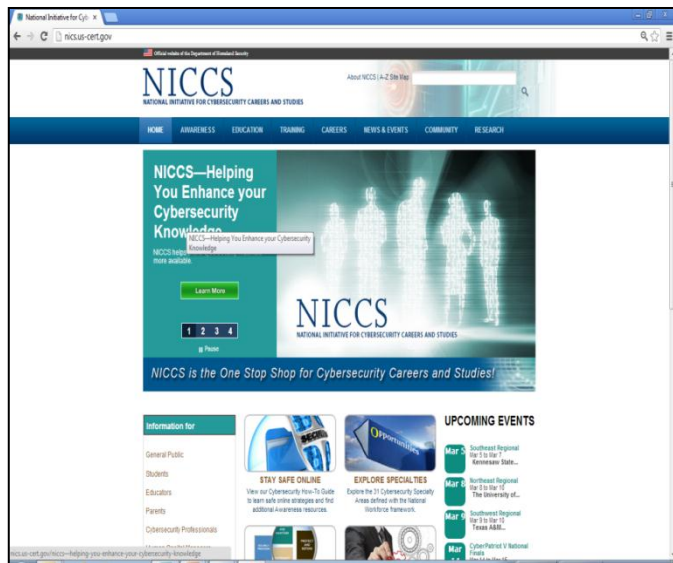
## **Goal 3: Guide Cybersecurity Standards**

- Guide the development of cybersecurity standards, training, and professional development to empower and advance cybersecurity personnel.



# Welcome to NICCS!

Lets look at how to navigate NICCS & some of the resources that are available to you!



NICCS is a website that is applicable and useful to everyone, including students, teachers, HR managers, current IT professionals, and anyone else who wants to learn more about cybersecurity and how it impacts your life.



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# Navigating the Home Page



The layout of the **Home Page** is designed to increase the visibility of NICE initiatives in an intuitive-format for the user.

The banner at the top displays various links throughout the site.

The main page includes information for various demographic groups, such as students, professionals and veterans.



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# Navigating the Awareness Tab

Click on the **Awareness** tab for more information on how to safeguard yourself and your organization from cyber threats.

The **Cyber Glossary** will assist users utilizing the site to become more familiar with cybersecurity lexicon.

The **Stop.Think.Connect.** campaign supports NICCS and is one way DHS is raising awareness of the increasing cybersecurity threat.



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# Navigating the Education Tab

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The top navigation bar includes links for HOME, AWARENESS, EDUCATION (highlighted), TRAINING, CAREERS, NEWS & EVENTS, COMMUNITY, and RESEARCH. The left sidebar lists various education-related topics, with 'Degree Programs' circled in red. The main content area features four featured sections: 'INTEGRATED LEARNING', 'TEACHING TOOLS', 'HANDS ON EXPERIENCES' (circled in red), and 'PROMOTING EDUCATION'. A red arrow points from the 'Degree Programs' link to the 'EDUCATION NEWS' section, and another red arrow points from the 'HANDS ON EXPERIENCES' section to the 'Hands on Experiences' text on the right.

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# NICCS

NATIONAL INITIATIVE FOR CYBERSECURITY CAREERS AND STUDIES

About NICCS | A-Z Site Map

HOME AWARENESS **EDUCATION** TRAINING CAREERS NEWS & EVENTS COMMUNITY RESEARCH

Home » Education » Education-Home

## EDUCATION

Furthering Cybersecurity & STEM

**Education Home**

- Degree Programs**
- Scholarship Opportunities
- Internship Opportunities
- Hands on Experiences
  - Cyber Competitions
  - Cyber Competitions Repository
  - Cyber Camps & Clubs
- Curriculum Resources
- Promoting Education
  - Integrated Cybersecurity Education
- Communities
  - Cyber Competition Project
  - National Centers of Academic Excellence
    - CyberCorps® Scholarship for Service
    - STEM Improvements

**INTEGRATED LEARNING**  
Learn about ways the Government is encouraging the integration of topics into STEM curricula for students in all grade levels.

**TEACHING TOOLS**  
Get new ideas for bringing technology into the classroom, find curriculum resources, and strategies for making STEM accessible.

**HANDS ON EXPERIENCES**  
Find activities that extend learning beyond the classroom.

**PROMOTING EDUCATION**  
Learn about NICE initiatives and programs underway to connect educators, students, and technology.

### EDUCATION NEWS

Provided by [The National Science Foundation](#)

Incoming! Then Outgoing! Waves Generated by Russian Meteor Recorded Crossing the U.S. [🔗](#)  
Monday, March 4, 2013 - 17:33

Fire Ants: Coping With These Invasive Insects [🔗](#)  
Monday, March 4, 2013 - 00:00

In Greenland and Antarctic Tests, Weti Helps Conquer Some "Abominable" Polar Hazards [🔗](#)  
Friday, March 1, 2013 - 17:14

"Defective" Virus Leads to Epidemic of Dengue Fever [🔗](#)  
Friday, March 1, 2013 - 04:44

National Science Foundation and NBC Learn Release New 'Science Behind The News' Videos [🔗](#)  
Wednesday, February 27, 2013 - 13:03

El Yunque, Majestic Rocky Icon of Puerto Rico: Impervious to the Ravages of Time? [🔗](#)  
Wednesday, February 27, 2013 - 10:53

To access the Education page, click on the **Education** tab.

Visit the **Degrees Page** to learn more about the majors and programs being offered throughout the country that lead to a career in cybersecurity.

The **Hands on Experiences** page provides resources where students can participate in various cyber clubs and competitions.



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# Navigating Education: Promoting Education

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- AWARENESS
- EDUCATION
- TRAINING
- CAREERS
- NEWS & EVENTS
- COMMUNITY
- RESEARCH

Home » Education » Promoting Education

## Promoting Education

Education Home

Degree Programs

Scholarship Opportunities

Internship Opportunities

Hands on Experiences

Cyber Competitions

Cyber Competitions Repository

Cyber Camps & Clubs

Curriculum Resources

**Promoting Education**

Integrated Cybersecurity Education Communities

Cyber Competition Project

National Centers of Academic Excellence

CyberCorps® Scholarship for Service

STEM Improvements

Curriculum Evidence Standards

Virtual Cybersecurity Labs

Software Assurance

Formal education opportunities for students are critical to help build and shape the future cybersecurity workforce of America. This applies to students at all levels, from K-12, through college, graduate, and post-graduate studies. The federal government aims to make such educational opportunities available to every student in the U.S. Component 2 of the NIC E campaign was established to strengthen the academic pipeline leading to cybersecurity careers.

### Engaging Students

One way students can become more involved in cybersecurity is through **Cyber Competitions**. Cyber competitions are interactive, scenario-based competitions that help participating individuals develop cybersecurity skills and increase interest in cybersecurity careers. Cyber competitions foster talent in potential cybersecurity professionals who might otherwise be unidentifiable through traditional academic means, and encourage mentor-led atmospheres where participants can practice and hone cybersecurity skills in a controlled, real-world environment. DHS CEO aims to identify U.S.-based cyber competitions to analyze which cybersecurity knowledge, skills and abilities (KSAs) and specialty areas (SAs) the competitions test and promote, based within the National Cybersecurity Workforce Framework (the Framework).

### Fostering Cyber Communities

Additionally, students can participate in various summer camps, including the **Integrated Cybersecurity Education Communities (ICEC)** project. The ICEC project is designed for U.S. high school students and aims to develop their interest in cybersecurity fields, through the professional development of high school teachers who teach them, and through the cybersecurity summer camps they can attend. High school teachers from multiple academic disciplines receive cybersecurity-integrated professional development courses and participate in cybersecurity camp with select students. Through professional development training, their experience at the camp, and online access to cybersecurity education materials, ICEC project teachers are equipped to bring cybersecurity principles to their classrooms.

### Enabling Public-Private Partnerships

The **I-Corps program**, sponsored by the National Science Foundation (NSF), is designed for college-level students and above. I-Corps is comprised of a set of activities and programs that prepare scientists and engineers to extend their focus beyond the laboratory and broadens the impact of select, NSF-funded, basic-research projects. While knowledge gained from NSF-supported basic research frequently advances...

Learn more about Educational opportunities at the **Promoting Education** page.

This page gives users examples of how they can learn more about cybersecurity, as well as details how users in the public and private sector are working together to foster increased education.

Learn more about **Cyber Communities** and how you can develop the technical skills necessary for a career in cybersecurity inside and outside the classroom.



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# Navigating the Training Tab

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The top navigation bar includes links for HOME, AWARENESS, EDUCATION, TRAINING (highlighted), CAREERS, NEWS & EVENTS, COMMUNITY, and RESEARCH. Below the navigation bar, the 'TRAINING' section is titled 'Promoting Continuous Workforce Development'. On the left, a sidebar menu lists: Training Home, National Cybersecurity Workforce Framework (circled in red), Training Catalog, Call for Providers, Map Your Training, Professional Certifications, FedVTE and FedCTE, and Workforce Development. The main content area features several sections: 'FIND COURSES' (with a magnifying glass icon and a red circle around the text), 'EXPLORE CERTIFICATIONS' (with a 'CERTIFIED' stamp icon), 'ASSESS & PLAN' (with a gear icon), 'SUBMIT TRAINING' (with a person icon), 'TRAINING RESOURCES FOR FEDERAL EMPLOYEES' (with a green stamp icon), and 'BECOME A PROVIDER'. Red arrows point from the 'National Cybersecurity Workforce Framework' link in the sidebar to the 'FIND COURSES' section, and from the 'FED VTE' link in the 'TRAINING RESOURCES FOR FEDERAL EMPLOYEES' section to the 'FIND COURSES' section.

To access the Training Catalog, click on the **Training** tab.

On the training landing page, you can click either **“Training Catalog,”** or the **“Find Courses”** button to enter the catalog.

Other links on this page will allow you to learn more about **the National Cybersecurity Workforce Framework.**



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# Navigating Training: Catalog Search

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The header includes the NICCS logo and navigation tabs: HOME, AWARENESS, EDUCATION, TRAINING, CAREERS, NEWS & EVENTS, COMMUNITY, and RESEARCH. The 'TRAINING' tab is selected. Below the navigation bar, there is a search bar with the text 'Education and Training Catalog Search' and a button labeled 'Explore the Framework'. To the right of the search bar is a search icon. Below the search bar, there are links for 'Catalog Introduction', 'Try Our Demo', and 'Results'. On the left side, there is a 'Filter Search' section with a 'Refine Course Criteria' heading. It includes a text input field with the word 'Cyber' and two dropdown menus: 'by Specialty Areas' and 'by Provider'. The 'by Specialty Areas' dropdown is open, showing options: 'All Source Intelligence', 'Collection Operations', and 'Computer Network Defense Analysis'. The 'by Provider' dropdown is also open, showing options: 'Academic Institution B', 'Academic Institution D', and 'Government Organization A'. At the bottom of the filter section are 'Reset' and 'Filter' buttons. On the right side, there is a list of search results. The first result is 'Applications Project and Research for Identity Management and Cyber Security Students' by 'Military School House C'. The second result is 'Conflict and Cyberspace' by 'Military School House C'. The third result is 'Control Systems Cyber Security Advanced Training and Workshop' by 'Government Organization F'. The fourth result is 'Control Systems Cyber Security Who Needs It?' by 'Government Organization F'. The fifth result is 'Counterintelligence in Cyber Space Phase 1 (CICS1)' by 'Government Organization A'. Red circles and arrows highlight the 'Explore the Framework' button and the 'Filter Search' section, pointing to the text on the right.

To search the Training Catalog, click on the **Catalog Search** Tab.

Cyber Professionals can use the Training Catalog to search available courses by **Specialty Area, Keyword, Provider.**

Training can also be browsed using the interactive Framework Specialty Areas by clicking **Browse Courses** using the **Workforce Framework.**



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# Navigating Training: Explore the Framework

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The header includes the NICCS logo and navigation tabs: HOME, AWARENESS, EDUCATION, TRAINING, CAREERS, NEWS & EVENTS, COMMUNITY, and RESEARCH. Below the navigation bar, there is a search bar and a link to 'Explore the Framework'. A red circle highlights the 'Explore the Framework' link, and a red arrow points from it to the right. Another red circle highlights the 'Overview' link in the sub-navigation bar, and a red arrow points from it to the right. The main content area is titled 'Interactive National Cybersecurity Workforce Framework' and includes sections for 'About the Framework', 'The Training Catalog and the Framework', and a grid of seven high-level categories: SECURELY PROVISION, OPERATE AND MAINTAIN, PROTECT AND DEFEND, ANALYZE, OVERSIGHT AND DEVELOPMENT, INVESTIGATE, and COLLECT AND OPERATE.

*The Training tab will also allow users to explore the National Cybersecurity Workforce Framework.*

*To explore the Framework, click the tab to the right of the Catalog Search tab, **Explore the Framework**.*

*You can explore the Framework by clicking on **Overview, Categories, Specialty Areas, KSAs, Competencies, and Tasks**.*



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# Navigating the Careers Tab

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The top navigation bar includes links for HOME, AWARENESS, EDUCATION, TRAINING, CAREERS (highlighted), NEWS & EVENTS, COMMUNITY, and RESEARCH. Below the navigation bar, the 'CAREERS' section is titled 'Driving Professionalization & Strategies for Talent Management'. On the left, a sidebar menu lists 'Careers Home' (circled in red), Talent Management, Professionalization, Cybersecurity Careers, Workforce Planning, and Career Roadmaps. The main content area features four large tiles: 'MANAGE TALENT' (Find, Attract and Retain Cyber Professionals), 'EXPLORE SPECIALTIES' (Explore the 31 Cybersecurity Specialty Areas defined with the National Workforce framework), 'NICE WHITEPAPERS' (A Historical Review of How Occupations Become Professions, Best Practices for Implementing Professionalization) (circled in red), and 'WORKFORCE PLANNING' (Align your workforce to current and future skill requirements). At the bottom, there is a section titled 'Why Foster Professionalization and Career Development?'.

To access Careers Page, click on the **Careers** tab.

The left side navigation menu provides information on various career-oriented topics, such as **professionalization** and **workforce planning**.

Access various **NICE White Papers** to learn more about professionalization and workforce planning.



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# Navigating Careers: Workforce Planning

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Home » Careers » Workforce Planning

Careers Home  
Talent Management  
Professionalization  
Cybersecurity Careers  
**Workforce Planning**  
Career Roadmaps

### Workforce Planning

#### Cybersecurity Workforce Planning

Workforce planning is a systematic way for organizations to determine future human capital requirements (demand), identify current human capital capabilities (supply), and design and implement strategies to transition the current workforce to the desired future work state. Best in class workforce planning is designed in a repeatable and reliable fashion, highlighting risks and forecasting needs over time.

Effective workforce planning highlights potential risk areas associated with aligning the workforce to work requirements. Applied correctly, workforce planning allows organizations to adjust resources to meet future workloads, patterns of work, and fundamental changes in how work is accomplished. A workforce planning approach must fit the needs of a specific organization and account for unique characteristics of the cybersecurity profession.

Leading practice workforce planning consists of three components:

- **Process:** Establishing an integrated and consistent means of diagnosing workforce needs and risks. This includes a defined model, data, and analytics.
- **Strategy:** Providing a direct line of sight between business and workforce requirements. This includes a shared vision, governance, and continuous monitoring or performance.
- **Infrastructure:** Supporting execution of an effective and repeatable workforce planning process. This includes a healthy workforce of people, collaboration across levels and enabling technology.

Using a Workforce Planning Process, such as the example provided below, an organization can conduct a cybersecurity workforce and workload analysis, enabling it to identify current and future needs and potential gaps which may impact an organization's ability to meet goals and objectives.

Phase 1 Phase 2 Phase 3 Phase 4

Define and Identify Workforce Conduct Supply Analysis Conduct Demand and Gap Analysis Implement Workforce Planning

Learn more about how to build your organization at the **Workforce Planning** page.

This page defines cybersecurity workforce planning and details what organizations can do to build a dynamic workforce.

This page provides resources to HR Managers who need to organize their workforce, including a 4-phased **Workforce Planning Process**.



# Navigating the News & Events Tab

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. At the top, there's a header with the NICCS logo and navigation links: HOME, AWARENESS, EDUCATION, TRAINING, CAREERS, NEWS & EVENTS (highlighted), COMMUNITY, and RESEARCH. Below the header, a sub-header reads 'Home » News & Events Home'. The main content area is titled 'NEWS & EVENTS' with the tagline 'The Best Source for all Cybersecurity Related News & Events'. On the left, a sidebar menu has 'News & Events Home' and 'Events', with 'Calendar' circled in red. The main content area features a 'News & Events Home' section with a description of the area's focus on cybersecurity news. Below this, there's a section for 'Education News' provided by The National Science Foundation, with two articles highlighted: 'Fire Ants: Coping With These Invasive Insects' and 'Incoming! Then Outgoing! Waves Generated by Russian Meteor Recorded Crossing the U.S.'. On the right, an 'UPCOMING EVENTS' section lists several events with dates and locations, including 'Southeast Regional', 'Northeast Regional', 'Southwest Regional', 'CyberPatriot V National Finals', and 'Federal Information Systems Security Educator's Association'. A 'VIEW CALENDAR' link is at the bottom of this section. Red arrows point from the 'Calendar' link in the sidebar to the 'UPCOMING EVENTS' section and from the 'Education News' section to the text on the right.

To access the News & Events page, click on the **News & Events** tab.

Learn more about various upcoming events in the display menu, or click the calendar tab for a full view of upcoming events.

Access various industry articles to stay informed on cybersecurity news and developments.



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# Navigating the Research Tab

The screenshot shows the NICCS (National Initiative for Cybersecurity Careers and Studies) website. The header includes the NICCS logo and the text 'Official website of the Department of Homeland Security'. A navigation bar contains links: HOME, AWARENESS, EDUCATION, TRAINING, CAREERS, NEWS & EVENTS, COMMUNITY, and RESEARCH. The RESEARCH link is circled in red. Below the navigation bar, the page title is 'Home » Research Home'. A large grey banner reads 'RESEARCH Promoting Research Efforts'. On the left, a sidebar menu has 'Research Home' and 'Documents', with 'Documents' circled in red. The main content area is titled 'Research' and contains several paragraphs of text about the importance of research and the repository's goals. A red arrow points from the 'Documents' link in the sidebar to the text 'The Document Library will take users to external sites where they can access research articles, journals and white papers.'

Official website of the Department of Homeland Security

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Home » Research Home

## RESEARCH

Promoting Research Efforts

Research Home  
**Documents**

### Research

Research is important in helping people find accurate and credible information. It is vital to our everyday decision making and can help individuals make smarter life decisions. The same holds true with [cybersecurity](#) research. It is important to your success as you take on life's challenges and career decisions making.

To help with this process, NICCS will house a repository of cybersecurity-related studies and information. The research posted here aims to help people become more informed about cybersecurity.

The NICCS Research tab will continue to grow, providing a repository of information on cybersecurity, science, technology, engineering, and math (STEM) studies, as well as workforce development, and professionalization. Start [exploring the repository](#).

To learn more about the Research tab, or to suggest materials for inclusion, contact the NICCS at [NICCS@dhs.gov](mailto:NICCS@dhs.gov)

To access the Research page, click on the **Research** tab.

Learn more about the ever-growing field of cybersecurity by accessing various white papers and scholarly articles.

The **Document Library** will take users to external sites where they can access research articles, journals and white papers.



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# Questions?

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## Questions?

For any questions or concerns following this webinar, please use the NICCS Supervisory Office mailbox: [NICCS@hq.dhs.gov](mailto:NICCS@hq.dhs.gov).

**Visit NICCS here:** [www.niccs.us-cert.gov](http://www.niccs.us-cert.gov)



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